

### Question 10

Hormones and enzymes are both organic substances formed in living things. Which of the following statements about these substances is correct?

- A Both hormones and enzymes are used at, or near their site of, production.
- B Vitamins are often needed for the efficient functioning of hormones, but not for enzyme function.
- C Enzymes are always made up of protein whereas hormones may consist of amino acids or steroids.
- D Both hormones and enzymes catalyse chemical reactions.

### Question 11

A similarity between the nervous system and the endocrine system is that they both:

- A secrete chemicals across synapses.
- B are composed of neurons
- C transmit messages from effectors to receptors
- D maintain homeostasis

### Question 12

The Port Jackson shark is a harmless, bottom-dwelling creature with a rather un-sharklike diet of molluscs and sea urchins. During the winter months the sharks wait until dusk to begin feeding and courting. This type of behaviour is known as:

- A diurnal
- B nocturnal
- C crepuscular
- D circadian

## Short-answer questions

Both the platypus (*Ornithorhynchus anatinus*), and the Australian water rat (*Hydromys chrysogaster*) spend time searching for food in very cold water. The platypus is a monotreme, whereas the water rat is a placental or eutherian mammal. The following table compares the two animals.

Feature	Water rat	Platypus
Mass (male)	400–1275 g	1000–2400 g
Average body temperature	38°C	32°C

### Question 1

- a Name **two** ways that heat is lost from both these animals during a dive.

i .....

ii .....

The platypus is very good at surviving in cold water even though it is small in size.

### Question 2

- b How does the size of an animal relate to its heat loss?

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